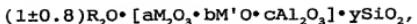


Abstract of the Disclosure

An ammonia decomposition catalyst wherein a first catalyst having a crystalline silicate which is represented by the formula in terms of molar ratio of oxides as

5 dehydrated:



wherein R denotes an alkaline metal ion and/or hydrogen ion, M denotes a VIII group element, rare earth element, titanium, vanadium, chromium, niobium, antimony or gallium, M' denotes magnesium, calcium, strontium or barium, $a \geq 0$, $20 > b \geq 0$, $a+c=1$, $3000 > y > 11$ or a specific porous material as a carrier and iridium or a noble metal as an active metal is present together with or covered with a second catalyst having at least one element selected from the group consisting of titanium, vanadium, tungsten and molybdenum, if necessary, as well as a method of using the same.